Fundamental of Multimedia

HOMERORK III

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7. Digital video uses chroma subsampling. What is the purpose of this? Why is it feasible?

**Answer:**

**(Purpose) The purpose is to have less information to transmit or store.**

**(Detail) Human vision has less acuity in color vision than it has in black and white - one can distinguish close black lines more easily than colored lines, which soon are perceived just a mass without texture as the lines move close to each other. Therefore, it is acceptable perceptually to remove a good deal of color information. In analog, this is accomplished in broadcast TV by simply assigning a smaller frequency bandwidth to color than to black and white information. In digital, we “decimate” the color signal by subsampling.**

8. What are the most salient differences between ordinary TV and HDTV? What was the main impetus for the development of HDTV?

**Answer:**

**(Differences) HDTV has more pixels, and aspect ratio of 16/9 rather than 4/3.**

**(Impetus) Good for interactive systems and applications such as virtual reality.**

9. What is the advantage of interlaced video? What are some of its problems?

**Answer:**

**(Positive) Reduce ﬂicker.**

**(Negative) Introduces serrated edges to moving objects and ﬂickers along horizontal edges**